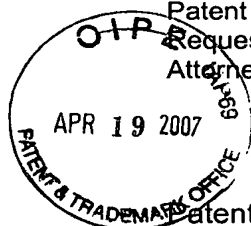


09/831,001.

CofC  
\$

Patent No. 7,163,626  
Request for Cert. of Correction dated april 16, 2007  
Attorney Docket No. 0702-010717



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No. : 7,163,626 Confirmation No. 8959  
Inventors : Cuypers et al.  
Issued : January 16, 2007  
Title : Device for Treating A Gas/Liquid Mixture  
Examiner : Krishman S. Menon  
Customer No. : 28289

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

ATTENTION: Decision and Certificate of Correction  
Branch of the Patent Issue Division

Sir:

In accordance with 35 U.S.C. §§254 and 255, we attach hereto Form PTO/SB/44 and a copy of proof of errors and request that a Certificate of Correction be issued in the above-identified patent. The following errors appear in the patent as printed:

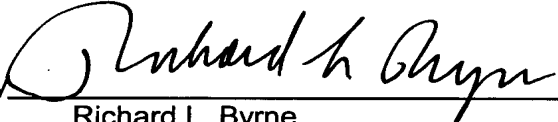
(1) Column 2, Lines 16-17, delete the heading  
"DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS"

Column 2, before Line 28, before the paragraph beginning "A vessel 1", insert the heading -- DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS --  
(See the Preliminary Amendment dated May 3, 2001.)

(2) Column 4, Line 33, Claim 3, "conical disposed" should read -- conical element disposed --  
(See the Preliminary Amendment dated May 3, 2001, page 3, Claim 15. See also the Appellant's Brief dated July 27, 2005, page 21 which begins the Claim Appendix, Claim 15, Line 2. Claim 15 issued as Claim 3.)

Error No. (1) is a printing error. Error No. (2) is an obvious typographical error made by Applicants. A check for \$100.00 is attached to cover the fee for correction of Applicants' mistake.

Respectfully submitted,  
THE WEBB LAW FIRM

By 

Richard L. Byrne  
Registration No. 28,498  
Attorney for Registrants  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219  
Telephone: (412) 471-8815  
Facsimile: (412) 471-4094

**Certificate**

APR 23 2007

**of Correction**

APR 23 2007

04/19/2007 MBELETE1 00000020 7163626

01 FC:1811

100.00 OP

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

Page 1 of 1

PATENT NO. : 7,163,626  
APPLICATION NO. : 09/831,001  
ISSUE DATE : January 16, 2007  
INVENTORS : Cuypers et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2, Lines 16-17, delete the heading  
"DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS"

Column 2, before Line 28, before the paragraph beginning "A vessel 1",  
insert the heading -- DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS --

Column 4, Line 33, Claim 3, "conical disposed" should read -- conical element disposed --

MAILING ADDRESS OF SENDER: The Webb Law Firm  
700 Koppers Building  
436 Seventh Avenue  
Pittsburgh, PA 15219

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-2450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select Option 2.*

23 2007



PATENT APPLICATION/PCT  
Attorney's Docket No. 702-010717

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :  
Cindy Thérèse Cornelia CUYPERS : **DEVICE FOR TREATING A**  
David Ian STANBRIDGE : **GAS/LIQUID MIXTURE**  
International Application :  
No. PCT/NL99/00677 :  
International Filing Date :  
04 November 1999 :  
Priority Date Claimed :  
04 November 1998 :  
Serial No. Not Yet Assigned :  
Filed Concurrently Herewith :

Pittsburgh, Pennsylvania  
May 3, 2001

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington DC 20231

Sir:

Prior to initial examination, please amend the above-identified patent application  
as follows:

**IN THE SPECIFICATION:**

**Please insert section headings.**

**On page 1, after the title, please insert the following section heading:**

**BACKGROUND OF THE INVENTION**

**R 2 3 2007**

On page 1, after the fourth complete paragraph, please insert the following section heading:

SUMMARY OF THE INVENTION

On page 3, before the first complete paragraph, please insert the following section heading:

BRIEF DESCRIPTION OF THE DRAWINGS

On page 3, after the first complete paragraph, please insert the following section heading:

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

IN THE CLAIMS:

Please cancel original claims 1-11 and cancel amended claims 1-12 and rewrite them as new claims 13-24 as follows:

13. A device for treating a gas/liquid mixture, comprising:
  - a) a tube having an inlet opening for the mixture and an outlet for the mixture located downstream;
  - b) rotating means arranged in the tube for setting the mixture into rotating movement;
  - c) one or more outlet openings arranged downstream relative to the rotating means for allowing a part of the mixture to flow laterally out of the tube;
  - d) a return conduit arranged centrally in axial direction through the rotating means for reintroducing the flow which has exited via the outlet openings; and
  - e) divergence means arranged close to the outer end of the return conduit for allowing the reintroduced flow to diverge laterally outward.

14. The device as claimed in claim 13, wherein the divergence means comprise slots recessed into an end part of the return conduit.



15. The device as claimed in claim 13, wherein the divergence means comprise a substantially conical element close to the outer end of the return conduit.

16. The device as claimed in claim 13, wherein the outlet openings are formed by a number of longitudinal slots in the side wall of the tube.

17. The device as claimed in claim 13, wherein the rotating means comprise a swirl element, of which the outflow angle for the mixture amounts to 15°- 85°.

18. The device as claimed in claim 17, wherein the outflow angle amounts to about 45°, about 60° or about 70°.

19. The device as claimed in claim 13, wherein the average diameter of 50% of droplets in the mixture amounts to 4  $\mu\text{m}$  or less.

20. An installation for separating water from gas, comprising:

- a) a vessel provided with a connecting stub for supply of the mixture;
- b) a drain conduit for draining liquid collected in the bottom of the vessel;

and

c) one or more boxes in which one or more devices as claimed in claim 13 are arranged.

Re "PA"

BRIEF DESCRIPTION OF THE DRAWINGS

Further advantages, features and details of the present invention will be elucidated on the basis of the following description with reference to the annexed drawings, in which:

fig. 1 shows a partly schematic view of an installation for separating a gas/liquid mixture, wherein a device according to the present invention is applied;

fig. 2 shows a partly cut-away view in perspective of detail II of fig. 1; and

10 fig. 3 shows a partly cut-away view in perspective of a further preferred embodiment of a device according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Re "PA"  
A vessel 1 (fig. 1) is provided with a connecting stub 2 for intake of gas/liquid mixtures, such as natural gas mixed with (salt sea) water. At the bottom of vessel 1 is collected the liquid F which can be drained via a pipe 3. In addition to a number of separating means (not shown), a number of boxes 4 are arranged in the upper part of vessel 1, while thereabove a connecting stub 5 is arranged on the vessel for discharging gas which has been dried at least partially or to a considerable degree. Boxes 4 are each provided individually or collectively with a conduit 6 which is in communication with the liquid F in the bottom of the vessel for draining liquid from each of the boxes.

Although in the present embodiment the boxes 4 are shown in a vertical arrangement, they can also be in a lying arrangement in another preferred embodiment which is not further shown.

30 In an embodiment of a box 4, fig. 2, are situated eight cyclones 10, one of which is shown in fig. 2, which each comprise a cylindrical wall 11 which forms on the underside an inlet for the gas/liquid mixture, and an outlet opening 12 on the upper side thereof. Roughly centrally in the space enclosed by the cylindrical wall is placed a so-called swirl element 13 which is provided with blades 14 for setting the mixture into rotating movement. A part of the mixture is flung outward by this

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

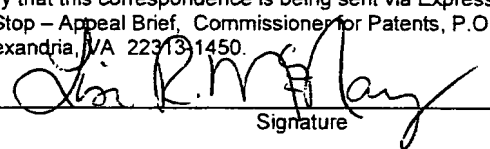
In re: Patent Application of : PATENT APPLICATION  
Cindy T.C. Cuypers et al. :  
Serial No.: 09/831,001 : Group Art Unit: 1723  
Filed: September 19, 2001 : Examiner: Krishnan S. Menon  
For: Device for Treating a Gas/Liquid :  
Mixture : Atty. Docket No.: 702-010717

**MAIL STOP APPEAL BRIEF – PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**ON APPEAL FROM THE PRIMARY EXAMINER TO THE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

**APPELLANT'S BRIEF UNDER 37 C.F.R. § 1.192**

I hereby certify that this correspondence is being sent via Express Mail to: Mail Stop – Appeal Brief, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
July 27, 2005 Date	 Signature
_____ Lisa R. McNany Typed Name of Person Signing Certificate	

APR 23 2007



CLAIM APPENDIX

1.

13. A device for treating a gas/liquid mixture, comprising:
- a) a substantially vertical tube having an inlet opening for the mixture and an outlet for the mixture located downstream;
  - b) rotating means arranged in the tube for setting the mixture into rotating movement;
  - c) one or more outlet openings arranged downstream relative to the rotating means for allowing a separated part of the mixture to flow laterally out of the tube;
  - d) a return conduit arranged centrally in an axial direction through the rotating means for reintroducing the flow which has exited via the outlet openings, and including a divergence element at an end part of the return conduit for causing the reintroduced flow to diverge substantially laterally outward from the return conduit and substantially prevent liquid creep flow along the rotating means; and
  - e) an axial obstruction in the reintroduced flow path for inducing the reintroduced flow in the divergence element to diverge substantially laterally outward from the divergence element;

wherein a flow path of the mixture comprises moving up the tube, out the one or more outlet openings, and reintroducing the flow through the return conduit with the flow diverging substantially laterally outward from the return conduit.

2.

14. The device as claimed in claim 13, wherein the divergence element comprises slots defined in the return conduit.

3.

15. The device as claimed in claim 13, wherein the axial obstruction comprises a substantially conical disposed in the reintroduced flow path.

APR 23 2007